

## Claims

- [c1] 1. An electrical system for an automotive vehicle comprising:  
a first power source having a first positive terminal and a first negative terminal;  
a second power source having a second positive terminal and a second negative terminal;  
a common electrical node coupled to said first negative terminal and said second positive terminal;  
a first load coupled between said first positive terminal and said common node;  
and  
a second load coupled between said common node and said second negative terminal.
- [c2] 2. An electrical system for an automotive vehicle as recited in claim 1 further comprising an inverter coupled to said first positive terminal and said second negative terminal.
- [c3] 3. An electrical system for an automotive vehicle as recited in claim 2 further comprising an integrated motor generator coupled to said inverter.
- [c4] 4. An electrical system for an automotive vehicle as recited in claim 1 further comprising an inverter coupled to a series combination of said first power source and said second power source.
- [c5] 5. An electrical system for an automotive vehicle as recited in claim 1 wherein said common node comprises a chassis ground.
- [c6] 6. An electrical system for an automotive vehicle as recited in claim 1 wherein said first power source comprises a 42 volt source.
- [c7] 7. An electrical system for an automotive vehicle as recited in claim 1 wherein said second power source comprises a 42 volt source.
- [c8] 8. An electrical system for an automotive vehicle as recited in claim 1 wherein said first power source has a first voltage rating and said second power source has a second voltage rating equal to said first voltage rating.

- [c9] 9. An electrical system for an automotive vehicle as recited in claim 1 further comprising a switch and a controller, said switch electrically coupling said first power source and said second power source in parallel.
- [c10] 10. An automotive vehicle comprising:  
a first power source having a first positive terminal and a first negative terminal;  
a second power source having a second positive terminal and a second negative terminal;  
a chassis ground coupled to said first negative terminal and said second positive terminal;  
a first load coupled between said first positive terminal and said chassis ground;  
a second load coupled between said chassis ground and said second negative terminal;  
an inverter coupled to said first positive terminal and said second negative terminal; and  
an integrated motor generator coupled to said inverter.
- [c11] 11. An automotive vehicle as recited in claim 10 wherein said first power source comprises a 42 volt source.
- [c12] 12. An automotive vehicle as recited in claim 10 wherein said second power source comprises a 42 volt source.
- [c13] 13. An automotive vehicle as recited in claim 10 wherein said first power source has a first voltage rating and said second power source has a second voltage rating equal to said first voltage rating.
- [c14] 14. An automotive vehicle as recited in claim 10 further comprising a switch circuit and a controller, said switch circuit electrically coupling said first power source and said second power source in parallel.
- [c15] 15. A method of operating an electrical system for an automotive vehicle comprising:  
operating a first load with a first power source;  
operating a second load with a second power source;  
forming a series combination of said first power source and said second power

source; and

operating an inverter with said series combination.

[c16] 16.A method as recited in claim 15 further comprising forming a common node between said first power source, said second power source, said first load and said second load.

[c17] 17.A method as recited in claim 15 further comprising switching said series combination to a parallel combination in response to a sensed condition.

[c18] 18.A method as recited in claim 17 wherein said sensed condition comprises a non-motoring mode.

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